NOAA Research's Coral Activities

Coral reefs support valuable fisheries and provide enjoyment for millions of tourists.

Mass coral bleaching is usually a response to persistent elevated sea temperatures, which are becoming more common with apparent global climate change.

NOAA Research (Oceanic and Atmospheric Research - OAR) allocated approximately $4.0M in FY02 to coral reef research and monitoring activities. NOAA Research conducts targeted research and monitoring to improve understanding of coral reef ecosystems as part of the NOAA-wide Coral Program at its Atlantic Oceanographic and Meteorological Laboratory (AOML) in Miami, FL, four National Undersea Research Program (NURP) centers, and six of its National Sea Grant College Programs.

Why do we do it?

Millions of people visit coral reefs every year to experience the beauty, bounty, and diversity that they offer. In the United States, coral reefs support millions of jobs and generate billions of dollars in revenues. NOAA is committed to providing fundamental environmental data in fulfillment of its overall mission, its mandates from the U.S. Coral Reef Task Force Action Plan, its formal collaborative agreement with the Australian Institute of Marine Science and the Great Barrier Reef Marine Park Authority, and its commitment to regional coral reef research. NOAA Research coral research efforts build on existing NOAA coral reef activities and seek to develop an approach that utilizes NOAA strengths in observations and monitoring.

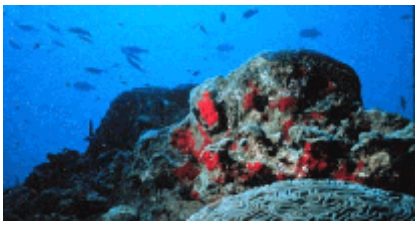
What do we do?

Coral Reef Watch

AOML supports the monitoring effort through the Coral Reef Watch (CRW) program and joint Coral Reef Early Warning System (CREWS) program with the National Environmental Satellite Data Information Service (NESDIS). CRW received $0.5M in FY02 for field observations and real-time monitoring to predict coral bleaching episodes through the Coral Reef Early Warning System software and the field monitoring station. Coral Reef Watch is
1) establishing an additional monitoring station in the U.S. Virgin Islands,
2) providing continued support for CREWS stations already established (i.e., Lee Stocking Island, NW Hawaiian Islands, current installation in St. Croix), and
3) providing near real-time inference of data to predict coral bleaching and other coral phenomena. The National Undersea Research Program's science staff will support the CREWS effort by maintaining the stations at Lee Stocking Island and the U.S. Virgin Islands, and verify current NESDIS satellite-based monitoring techniques to support coastal health and coral monitoring.

National Undersea Research Program

NURP conducts coral reef research at four regional centers including the University of North Carolina at Wilmington, Caribbean Marine Research Center, Hawaii Undersea Research Laboratory, and the University of

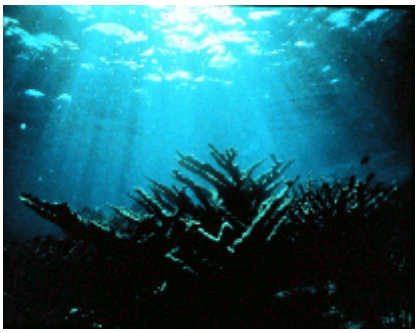


Coral reefs are among the most fragile, heavily impacted, and rapidly disappearing ecosystems on Earth.

Connecticut at Avery Point. NURP allocated in FY02 a total of $2.55M from base funding to coral reef research. Of this total, $1.3M was directed for operation of Aquarius, the world's only oceanic undersea research laboratory; $0.42M was allocated to the University of North Carolina at Wilmington (UNCW) for coral fisheries assessments, population dynamics, and reef health in the Florida Keys National Marine Sanctuary (FKNMS); $0.2M was allocated to the Caribbean Marine Research Center for reef restoration, monitoring, economically important reef fish species, and genetic research; the Hawaii Undersea Research Laboratory received $0.5M for research in sustainable fisheries, coral health, and monitoring (collaboration with NMFS, NOS); and the University of Connecticut at Avery Point received $0.13M to study taxonomic distribution and the ecological role of cold water deep corals off of the Northeastern United States.

National Sea Grant College Program

The National Sea Grant College Program conducts coral reef research through six sites, including California, Florida, Hawaii, Puerto Rico, South Carolina, and Texas. Sea Grant allocated a total of $0.90M from base funding to coral research activities in FY2002. Of this total, $0.11M was allocated to California Sea Grant for sustainable fisheries on artificial reef; $0.15M was allocated to Florida Sea Grant for sustainable coral fisheries, reef restoration, and Florida Keys coral research; $0.20MK was allocated to Hawaii Sea Grant for essential fish habitat and sustainable coral fisheries; $0.16M was allocated to Puerto Rico Sea Grant for essential coral fish habitat, sustainable fisheries and monitoring; $0.15M was allocated to South Carolina Sea Grant for monitoring efforts; and $0.13M was allocated to Texas Sea Grant for coral research at Flower Garden Banks in the Gulf of Mexico.



Elkhorn corals, which form the forest of many coral reefs, have declined significantly in the Caribbean over the past 20 years.

What are the benefits?

Coral Reef Watch

Coral Reef Watch CREWS stations provide decision support for sanctuary managers and timely feedback to researchers studying bleaching and other biological events in the coral reef ecosystem. They also offer critical surface-truthing of NESDIS satellite HotSpot techniques used to predict coral bleaching, are the first marine environmental monitoring tools of their kind, and successfully predicted coral bleaching in the Florida Keys and the Great Barrier Reef.

National Undersea Research Program

NURP provides scientists with platforms and expertise to perform mission-directed undersea research and assessments related to coral reefs. The Centers provide science-based guidance to other NOAA Line Offices on matters related to the management and restoration of marine sanctuaries, fisheries, essential fish habitat, and marine protected areas; improved monitoring techniques for coral health monitoring; linkages between coral reef habitat health and fisheries productivity; characterizations of precious coral fisheries, coral beds and other benthic habitats and their ecological importance; and critical science-based information regarding the effects of stressors to coral (e.g. nutrients, radiation, temperature, turbidity, fluid flow, predators, diseases).

National Sea Grant College Program

Sea Grant conducts targeted regional scientific research to provide: managers with science-based information to direct decision making; descriptions of trophic and energy structures critical to reef fisheries communities; aids for identifying sub-habitats critical to the production of recreationally and commercially important fishery species; insight into sustainability of coral fisheries and impacts on essential fish habitat; and technological advances to address impacts of coral harvesting and import.

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